

III. *An Abstract of the Meteorological Diaries, communicated to the Royal Society, with Remarks upon them, by W. Derham, D. D. Canon of Windsor, F. R. S.* [Vide PART III. in *Transact.* N° 433.]

PART IV. *Containing Meteorological Observations made at*

Naples	} 1727.
Bengal	
Christiana	

A N Abridgment of the *Meteorological Observations* made in the Year 1727, at *Naples*, by Dr. Nic. *Cyrillus*, *Prim. Med. Profes.* and at *Bengal*, by the Reverend Mr. *Bellamy*, Chaplain to the English Factory; and at *Christiana* in *Norway*, by —— communicated by Mr. *Pr. Kink.* Extracted, for the Use of the *Royal Society*, by *W. Derham, F. R. S.*

I shall begin (as in my former Abstracts) with a short and easy View of the *Barometrical* and *Thermometrical Observations*, in these little Tables of them, which will be the more valuable, on account of the Observations being made (as I suppose) with some of the *Societies* Glasses, of Mr. *Haukesbee's* Preparation.

The *Barometrical Means of Naples* are, both as they are set down by the illustrious Observer
H h h 2 himself,

himself, according to Dr. Jurin's Directions; and also as they are between the highest and lowest Stations of every Month. Those of Norway, are in the latter Way.

A TABLE of the Barometrical Ranges at Naples, and at Christiana in Norway, in the Year 1727.

JANUAR.		FEB.	MAR.	APRIL.	MAY.	JUNE.	
	Naples	Naples	Naples	Naples	Naples	Naples	Norw.
High	29.80	29.88	30. 6	29.88	29.88	29.72	29.3
Mean	29.55	29.65	29.72	29.59	29.73	29.71	29.1 $\frac{1}{2}$
Low	29.30	29.38	29.12	29.54	29.54	29.46	29.0

The TABLE continued.

JULY.		AUGUST.		SEPTEMBER.	
	Naples	Norw.	Naples	Norw.	Naples
High	29. 80	29. 7	29. 80	29. 7	29. 88
Mean	29. 67	29. 70	29. 32	29. 55	29. 63
Low	29. 54	29. 0	29. 30	29. 12	29. 3

OCTOBER.		NOVEMBER.		DECEMBER.	
	Naples	Naples	Naples		
Highest	29. 88	30. 06	29. 88		
Mean	29. 50	29. 66	29. 59	29. 75	29. 59
Lowest	29. 12	29. 12	29. 12	29. 30	29. 30

A TABLE of the Thermometrical Ranges at Naples, Bengal, and Christiana, in the Year 1727.

JAN.		FEB.		MARCH		APRIL		MAY		JUNE.	
Nap.	Beng.	Nap.	Beng.	Nap.	Beng.	Nap.	Beng.	Nap.	Beng.	Christf.	
High	51.3	44.5	48.3	15.2	41.0	15.3	30.0	20.4	20.0	10.8	46
Mean	47.1	40.0	41.0	7.6	31.0	7.9	24.0	10.6	14.7	5.8	37
Low	43.0	35.0	34.5	0.1	21.0	0.6	18.0	0.7	9.5	0.8	29

JULY		AUGUST		SEPT.		Oct.	No ^r .	DEC.
Nap.	Beng.	Christf.	Nap.	Beng.	Christf.	Nap.	Beng.	Nap.
High	17.0	15.4	40	21.0	15.4	45	25.0	10.4
Mean	10.0	7.7	35	11.1	7.8	35	19.7	7.7
Low	3.0	0.1	30	7.3	0.2	25	14.5	5.0

These

These Tables give an easy View of the *Barometer* and *Thermometer* in the several distant Parts of the World specified : which would have been very instructive, had they been observed throughout the Year, as they were at *Naples*.

By the *Barometrical Observations* it appears, that the Ascent and Descent of the Quicksilver is not so great at *Naples* as in the more Northerly Climes : For it was but twice in the whole Year, above 30 Inches ; and but thrice as low as 29.12 Inches. And so in *Philos. Transact.* N^o 321. I observed, that, at *Zurich* the Range is but about an Inch ; but at *Upminster* I find the highest Ascent to have been 30.44 Inches ; and the lowest Descent 27.44 Inches, which is a Range of $2\frac{1}{2}$ Inches : And by my Account of the *Petersburgh Observations* in 1724, it appears that the Mercurial Range there is 3.31 Inches, in *Philos. Transact.* N^o 424. p. 107. And as for *Norway*, the Observations are too few, and all made only in the Summer Months, whereby no good Judgment could be made : And *Bengal* had no *Barometer*.

By the *Thermometrical Table* we may judge of the Heat and Cold of the several Places. For the right understanding of which, I must repeat what I said in a former Abridgment, *viz.* That in Mr. *Haukesbee's Thermometers*, the Point of *Extreme Heat* is 5 Degrees above 0 ; that 45 Degrees below 0, is the Point of *Temperate* ; and 65 Degrees, the Point of *Freezing*. But Dr. *Cyril* (*vide Phil. Transact.* N^o 429. p. 336.) saith it freezes with them at *Naples* when the Spirits are only got to 55 Degrees. His Words deserve Consideration : *Illud verstrum prespicaciam, & investigandarum naturalium rerum studio dignum reputo, quā de re fiat, ut apud*

apud nos Aqua congelescat, Thermometri liquore vix ad gr. 55 depresso, quum Londini id non accidat nisi ad gr. 65, quo loco vestrum Frost est notatum. Si quid valet Philosophari, ad Aquæ in Gelu concretionem, præter intensum Frigoris gradum, aliquid aliud requiritur, quo in nostris, non in vestris regionibus Aer ditatus est. Quemadmodum ut Aqua in Glaciem arte mutetur, haud nix sola, sed sale mixta admovenda.

And as at Naples it Freezes at a warmer Degree of the Thermometer; so I observe that at *Christiana* the illustrious Observer complains of the vehement Heat of the Sun, *Aës Solis vehementis*, in *July*, when the Spirits were but at 36 Degrees and 34 Degrees; in *August* at 25, 27, and 28 Degrees, he says, the Weather was exceeding hot, *Cælum calidissimum*. I thus distinctly mention (as the Author doth) the Heat of the Sun, and the Heat of the Weather, because they may not mean the same Thing, I having been informed by the Whale-Fishers, that in *Greenland* the Heat of the Sun is scarce tolerable on one Side of the Ship, when on the other Side it Freezes hard.

At *Bengal* the Heat at some times seems to be very intense, by the Thermometer being, in some Months, more Degrees about the 0, than the Point of Extreme Heat is. As particularly in *April*, *May* and *June*, it was 6, 7, and 8 Degrees above 0. But those excessive Heats are generally in the Afternoons, the Forenoons being more temperate, and the Temperature, or what they call Cold there, is at the same Time of the Day. And the Degree of the Thermometer, at which they reckon it coldish, is about

about 15 Degrees. And on *May 2d*, at 8 o' Clock in the Morning, Mr. *Beilamy* saith (he Glac'ing then at 20.4 Degree.) *The Morning was like Winter Weather in Europe.*

Whether this so different Judgment of great Cold at *Bengal*, when the Thermometer was about 20 Degrees; and of excessive Heat at *Christiana*, when it was but a little below that, *viz.* at 25 Degrees, &c. Whether, I say, this difference of Judgment arises from some Prejudice of the Senses, or from some extraordinary Quality in the Air, I leave (as Dr. *Cyril* doth) to the Judgment of the learned Society.

As to the Weather, Winds, Rain, &c. of the several Places, it would be endless to meddle with Particulars, and therefore a transient View of every Month must suffice.

At *Naples*, *January* was a cool Month, frequent Rain, with much Thunder and Storms of Wind. The Rain amounted to $111\frac{1}{2}$ Measures (23 of which make an *English* Inch in Depth) which is 4 Inches $19\frac{1}{2}$ Measures, or near 5 Inches Depth. *Vesuvius* was pretty quiet.

February was a drier Month, the Rain amounting only to 14 Measures, which is but little above half an Inch deep. The Weather was for the most part Cloudy, with some Frosts. *Vesuvius* emitted a thick Smoak.

At *Naples*, in *March* it was cold, with Hail, and Snow on the Mountains, the Rain amounted to 101 Measures, which makes 4 Inches, 9 Measures depth. The Winds were in all the Points. *Vesuvius* discharged Rivulets of Fire.

At

At *Bengal* the five last Days (which were all observed in this Month) were Fair, the Wind S².

In *April* the Winds at *Naples* were much in the northerly Points, cold, frequent Thunder, the Rain only 38 Measures, which make 1 Inch, 15 Measures. No Fire in *Vesuvius* the Beginning of the Month, but towards the latter End, divers Rivers of Fire and Smoak.

At *Bengal* the Wind was much among the southerly Points, Cloudy, some Rain and Thunder. The Weather for the most part temperate, but great Heats in the Afternoons.

In *May*, at *Naples*, the Wind lay much in the westerly and southerly Points. Rain 103½ Measures, which makes 4 Inches 11½ Measures Depth, with frequent Thunder. *Vesuvius* cast out Rivets of Fire, which reached almost to the Bottom of the Mountain.

At *Bengal* the Winds varying, but for the most part southerly, with much Cloudy, Rain, and Thunder. The Beginning of the Month colder than ordinary ; afterwards exceeding hot.

In *June*, at *Naples*, the Wind was much in the westerly and north-westerly Points, but little Rain, only 6½ Measures, which is but about a quarter of an Inch depth.

At *Bengal*, much Rain with Thunder and Heat. On *June* 6th, it is noted, *we are now pretty certain the Rains are set in.*

At *Christiana*, the Observations begin on *June* 22d. The Weather temperate, and for the most part cloudy, with Thunder, Hail and Rain.

July, at *Naples*, was a very hot, dry Month, without any Rain, but frequent Mists. *Vesuvius* quiet.

At *Bengal* frequent and much Rain, with Thunder and Lightening; for the most part cloudy. Winds perpetually varying.

At *Christiana*, great Rains with Thunder, frequent Fogs, some Fair, and Complaints of vehement Heat, although the Thermometer was but at 30 Degrees in that Month.

In *August*, at *Naples*, the Wind was in the westerly and north-westerly Points. Showers with Thunder were frequent, which amounted only to $49\frac{1}{2}$ Measures, which is but a little above 2 Inches depth. And although, by the Table, the Weather seems to have been warm, yet there are frequent Complaints of the Air being cold. *Vesuvius* cast forth a large River of Fire.

At *Bengal* much Rain, with Thunder and Cloudy. Winds varying, but pretty much Easterly. Weather sometimes very hot, but for the most Part more Temperate than in some of the other Months.

At *Christiana* the Winds various; frequent Mists, with Cloudy, and sometimes Fair, and sometimes Rain. Great Complaints of Heat, although by the Thermometer no great Signs of it.

In *September*, at *Naples*, the Winds various, and very stormy towards the latter End of the Month, with horrible Thunder, Lightening, and heavy Rain, which amounted to $220\frac{1}{2}$ Measures, making 9 Inches $13\frac{1}{2}$ Measures in depth; which was more than fell in any Month of this Year, and drowned the Marshes, and did a great deal of Damage to

Houses, Trees, &c. *Vesuvius* was quiet at the Beginning, but fiery at the End.

Bengal, hath only the 7 first Days Observations where the Wind was mostly Easterly, Cloudy, and Showery, with Thunder and Lightening.

The Observations of the remaining Months are all of *Naples*; where, in

October, the Wind was various, and sometimes stormy, with Thunder; frequent Mists, and sometimes heavy Rain, amounting to 107 Measures, which make 4 Inches 15 Measures, and in the Mountains Snow. *Vesuvius* turbulent in the Beginning of the Month, and emitted a River of Fire.

November was, for the most Part, a cloudy misty Month, with Thunder and Rain; but of no greater Quantity than 73 Measures, which are equal to 3 Inches 4 Measures depth *English*. The Wind was more Northerly than in any other Quarter. The Fire of *Vesuvius* less.

December was a wet, unseasonable Month, the Rain being 179 Measures, which is 7 Inches 18 Measures in depth; which following the Rains and unseasonable Weather of the preceeding Months, so damaged the Fruits of the Earth, that publick Prayers were ordered for fair Weather.

The Rain of the whole Year the illustrious Observer computes at 3 *English* Feet 7 Inches and 14½ Measures. And to shew how much wetter this Year was than the others, he gives these Quantities of the Year 1724, 2 *English* Feet 10 Inches, 14 Measures; of 1725, 2 Feet 10 Inches, 17 Measures; of 1726, 1 Foot, 11 Inches, 14½ Measures.